## ABSTRACT

A method and system is provided for automatically calibrating a masking process simulator using a calibration mask and process parameters to produce a calibration pattern on a wafer. A digital image is created of the calibration pattern, and the edges of the pattern are detected. Data defining the calibration mask and at least one of the process parameters are input to a process simulator to produce an alim image estimating the calibration pattern that would be produced by the masking process. The alim image and the detected edges of the digital image are then overlaid, and a distance between contours of the pattern in the alim image and the detected edges is measured. One or more mathematical algorithms are used to iteratively change the values of the processing parameters until a set of processing parameter values are found that produces a minimum distance between the contours of the pattern in the alim image and the detected edges.